SYSTEM/SUBSYSTEM SPECIFICATIONS

Public and Indian Housing (PIH)
Real Estate Assessment Center (REAC)
Resident Assessment Subsystem (RASS)
Release 8.4.0.0

U.S. Department of Housing and Urban Development

Version 1

July 28, 2004

Revision Sheet

Release No.	Date	Revision Description
Rev. 1	07/28/2004	Final Version
Rev. 1.1	07/28/2004	Internal Team Review
Rev. 1.0	07/23/2004	Initial document

System/Subsystem Specifications Authorization Memorandum

I have carefully assessed the System/Subsystem Specifications for the Resident Assessment Subsystem (RASS) Release 8.4.0.0. This document has been completed in accordance with the requirements of the HUD System Development Methodology.

MANAGEMENT CERTIFICATION - Please check the appropriate statement.

_____ The document is accepted.

_____ The document is accepted pending the changes noted.

_____ The document is not accepted.

We fully accept the changes as needed improvements and authorize initiation of work to proceed. Based on our authority and judgment, the continued operation of this system is authorized.

_____ _____
Delton Nichols DATE
RASS Project Manager

_____ _____
Yangja Lee DATE
RASS IT Manager / GTM

SYSTEM/SUBSYSTEM SPECIFICATIONS

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1.0 GENERAL INFORMATION

1. GENERAL INFORMATION

1.1 Purpose

The RASS Release 8.4.0.0 Department of Housing and Urban Development (HUD) System Development Methodology (SDM) System/Subsystem Specifications Document is one of five HUD SDM Design Phase deliverable. This series of HUD SDM Design Phase deliverable includes the System/Subsystem Specifications; Program Specifications; Validation, Verification and Testing (VVT) Plan; Training Plan; and Database Specifications.

This document outlines the RASS Release 8.4.0.0 System/Subsystem Specifications for new and modified RASS functionality. This release includes:

- Updating the Implementation Plan functionality to ensure that PHAs perform all their activities within a specified timeframe.
- A new At Risk PHA report to pull up a list of PHAs for a given field office, that are at risk of failing RASS.
- Enhancement to the scoring process to automatically assign last year's scores for selected PHAs.
- Upgrades to reports to support changes in PHAS regulation such as the Small PHA Deregulation Rule and FYE changes.
- Enhancement to the Demographic report to display PHA level survey section scores by a resident's age and gender.
- Enhancement to the PHA History report to display the total number of units, the number of low rent units, the number of Section 8 units and the number of occupied units for a PHA and update the Follow-up plan certification information.
- Standardizing RASS component access dates.
- Fixing the count for undeliverable addresses on the Required Survey Size Threshold report.
- Fixing the Comment functionality on the Review/Approve PHA Scores report.
- Removal of the consortia functionality from the system because the calculation of a consortia PHA's score is being moved outside the PIH-REAC's Secure Systems.

1.2 Scope

RASS Release 8.4.0.0 expands on RASS Release 8.3.1.0 functionality and will be implemented on December 17, 2004. The following table describes the functionality to be implemented.

New Capabilities (High Level)
1. Update the RASS Implementation Plan Activity functionality to ensure that PHAs perform activities to implement the survey close to the defined Implementation Plan window.
2. Create an At Risk PHA report to pull up a list of PHAs for a selected field office that are at risk

of failing RASS.
3. Enhance the scoring process to provide the capability to automatically assign last year's survey scores for a selected PHA.

Upgraded Capability (High Level)
1. Update reports to support the changes to the PHAS regulations such as the Small PHA Deregulation Rule and FYE changes.
2. Expand the Demographic report to display PHA level survey section scores by a resident's age and gender.
3. Enhance the PHA History Report to display the total number of units, the number of low rent units, the number of Section 8 units, the number of occupied units for a PHA and update the Follow-up Plan certification information column to display "Not Required" if the Follow-Up Plan certification is not required.

Elimination of Deficiencies
1. Standardize the RASS Component access dates by implementing the same logic for inserting the certification window dates and the logic for verification against dates for all three components.
2. Fix the undeliverable address count calculation on the Required Survey Size Threshold Report to only display the counts for selected FYE.
3. Fix the Comment functionality on the Review/Approve PHA Scores report to work with special characters.

Elimination/Reduction of Capabilities No Longer Needed
1. Update the RASS online system to remove the consortia functionality as the calculation of a consortia PHA's score is being moved outside the PIH-REAC's Secure Systems.

1.3 System Overview

The following table identifies the system environment for RASS Release 8.4.0.0.

System Environment	
System	Real Estate Assessment Center System (REACS)
Subsystem	Resident Assessment Subsystem (RASS).
Sponsor	Public and Indian Housing – Real Estate Assessment Center (REAC)
PCAS	00307680
System Code	P089
System Category	Non-major
Operational Status	Operational
System Environment	Web Based
Requirements	Quality Software Services, Inc. (QSSI)
Design	QSSI
Development	QSSI
System and Integration Testing	QSSI

System Environment	
User Acceptance Testing	HUD RASS Client Team
Deployment	QSSI with REAC DCG (Paradigm Soln./ Booz-Allen & Hamilton)
Maintenance	QSSI

The following table identifies and briefly describes the different users of RASS.

User Environment	
REAC RASS Business Team	The REAC RASS Business Team uses RASS to view PHA and development-level scoring and certification reports and Multifamily Survey result information. The team also uses the system to complete the various processes (Unit Address Sampling; Implementation Plan; Survey and Follow-up Plan Scoring; RASS Score Approval) required during resident assessment.
Public Housing Agency (PHA)	PHA(s) use RASS to participate annually in the Resident Assessment process. PHA(s) certify their unit addresses, complete an Implementation Plan for resident notification about the annual resident survey process, and complete a Follow-up Plan outlining sources of funding and dates to be completed for required areas (low-scoring survey sections) identified by the resident survey results. PHA(s) may also use the system to view survey result and resident response rate information.
Survey Administrator	After the sampling program has generated a file of units to be surveyed, RASS downloads the sample file to the Survey Administrator. The Survey Administrator distributes the RASS survey to the units indicated in the sample file. Once the Survey Administrator collects and analyzes survey data, the survey results and response rate information are uploaded in RASS from the Survey Administrator so that PHA(s) and Multifamily Owners/Agents may view this information.
Multifamily (MF) Owners/Agents	MF Owners/Agents use RASS to view survey result information for their assigned properties.
Other HUD Users (includes HUD PIH Field Offices)	All other HUD users have read-only access to RASS in order to review PHA and Multifamily Housing development or property level survey result information.

1.4 Project References

The following documents are available to provide a comprehensive understanding of the resident assessment process. Most documents are available via the REAC Document Library. Additionally, several of the documents listed below are available through the PHA Resident Assessment Internet site at ***http://www.hud.gov/offices/reac/products/prodrass.cfm***

Release 8.4.0.0
"RASS Release 8.4.0.0 Needs Statement", QSSI, 06/30/2004
"RASS Release 8.4.0.0 Project Plan", QSSI, 06/30/2004
"RASS Release 8.4.0.0 Feasibility Study", QSSI, 06/30/2004
"RASS Release 8.4.0.0 Cost/Benefit Analysis", QSSI, 06/30/2004
"RASS Release 8.4.0.0 System Decision Paper", QSSI, 06/30/2004

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"RASS Release 8.4.0.0 Risk Analysis", QSSI, 06/30/2004
"RASS Release 8.4.0.0 Data Requirements Document", QSSI, 07/14/2004
"RASS Release 8.4.0.0 Functional Requirements Document", QSSI, 07/14/2004
"RASS Release 8.4.0.0 Security and Privacy Plan", QSSI, 07/14/2004
"RASS Release 8.4.0.0 System Support and Acquisition Plan", QSSI, 07/14/2004

Release 8.3.0.0
"RASS Release 8.3.0.0 User's Manual", QSSI, 06/11/04
"RASS Release 8.3.0.0 Maintenance Manual", QSSI, 06/11/04
"RASS Release 8.3.0.0 Operations Manual", QSSI, 06/11/04
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"RASS Release 8.3.0.0 Validation, Verification, and Testing Plan", QSSI, 03/16/04
"RASS Release 8.3.0.0 Training Plan", QSSI, 03/16/04
"RASS Release 8.3.0.0 System-Subsystem Specifications", QSSI, 03/16/04
"RASS Release 8.3.0.0 Program Specifications", QSSI, 03/16/04
"RASS Release 8.3.0.0 Database Specification", QSSI, 03/16/04
"RASS Release 8.3.0.0 Unit Test Plan", QSSI, 03/09/04
"RASS Release 8.3.0.0 Data Requirements Document", QSSI, 12/19/03.
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"RASS Release 8.3.0.0 System Security & Privacy Plan", QSSI, 12/19/03.
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"RASS Release 8.3.0.0 Project Plan", QSSI, 12/09/03.
"RASS Release 8.3.0.0 Feasibility Study", QSSI, 12/09/03.
"RASS Release 8.3.0.0 Cost/Benefit Analysis", QSSI, 12/09/03.
"RASS Release 8.3.0.0 System Decision Paper", QSSI, 12/09/03.
"RASS Release 8.3.0.0 Risk Analysis", QSSI, 12/09/03.

Release 8.2.0.0
"RASS Release 8.2.0.0 Project Plan", QSSI, 10/09/03.
"RASS Release 8.2.0.0 Test Results and Evaluation Report", QSSI, 11/21/03.
"RASS Release 8.2.0.0 Functional Requirements Document", QSSI, 10/21/03.
"RASS Release 8.2.0.0 Program Specifications", QSSI, 11/14/03.
"RASS Release 8.2.0.0 System Specifications Document", QSSI, 10/21/03.
"RASS Release 8.2.0.0 Unit Test Plan", QSSI, 10/20/03.

Releases 8.0.0.0 & 8.1.0.0
"RASS Releases 8.0.0.0 & 8.1.0.0 Maintenance Manual", QSSI, 06/17/03.
"RASS Releases 8.0.0.0 & 8.1.0.0 Operations Manual", QSSI, 06/17/03.
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"RASS Releases 8.0.0.0 & 8.1.0.0 System Specifications Document", QSSI, 04/30/03.
"RASS Releases 8.0.0.0 & 8.1.0.0 Program Specifications Document", QSSI, 04/30/03.

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"RASS Releases 8.0.0.0 & 8.1.0.0 Validation and Verification Plan", QSSI, 04/30/03.
"RASS Releases 8.0.0.0 & 8.1.0.0 Training Plan", QSSI, 04/30/03.
"RASS Releases 8.0.0.0 & 8.1.0.0 Database Specifications Document", QSSI, 04/30/03.
"RASS Releases 8.0.0.0 & 8.1.0.0 Data Requirements Document", QSSI, 03/18/03.
"RASS Releases 8.0.0.0 & 8.1.0.0 Functional Requirements Document", QSSI, 03/18/03.
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"RASS Releases 8.0.0.0 & 8.1.0.0 System Security & Privacy Plan", QSSI, 03/18/03.
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"RASS Release 8.0.0.0 Risk Analysis", QSSI, 01/10/03.

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"RASS Release 7.1.0.0 User's Manual", Accenture, 01/25/2002.
"RASS Release 7.1.0.0 Integration Test Results and Evaluation Report", Accenture, 01/25/2002.
"RASS Release 7.1.0.0 System Test Results and Evaluation Report", Accenture, 01/25/2002.
"RASS Release 7.1.0.0 Release Notes", Accenture, 01/22/2002.
"RASS Release 7.1.0.0 Test Plan", Accenture, 12/18/2001.
"RASS Release 7.1.0.0 Validation, Verification, and Testing Plan", Accenture, 12/11/2001.
"RASS Release 7.1.0.0 System/Subsystem Specifications", Accenture, 11/15/2001.
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"RASS Release 7.1.0.0 Program Specifications", Accenture, 11/15/2001.
"RASS Release 7.1.0.0 System Support and Acquisition Plan", Accenture, 11/06/2001.
"RASS Release 7.1.0.0 Functional Requirements Document", Accenture, 11/06/2001.
"RASS Release 7.1.0.0 Data Requirements Document", Accenture, 11/06/2001.
"RASS Release 7.1.0.0 System Security and Privacy Plan", Accenture 11/06/2001.
"RASS Release 7.1.0.0 Needs Statement", Accenture, 10/22/01.
"RASS Release 7.1.0.0 Project Plan", Accenture, 10/22/01.
"RASS Release 7.1.0.0 Feasibility Study", Accenture, 10/22/01.
"RASS Release 7.1.0.0 Cost/Benefit Analysis", Accenture, 10/22/01.
"RASS Release 7.1.0.0 Risk Analysis", Accenture, 10/22/01.

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"RASS Release 7.0.0.0 System Decision Paper", Accenture, 09/21/01.
"RASS Release 7.0.0.0 Maintenance Manual", Accenture, 09/21/2001.
"RASS Release 7.0.0.0 Operations Manual", Accenture, 09/21/2001.
"RASS Release 7.0.0.0 Installation and Conversion Plan", Accenture, 09/21/2001.
"RASS Release 7.0.0.0 Integration Test Results and Evaluation Report", Accenture, 09/21/2001.
"RASS Release 7.0.0.0 System Test Results and Evaluation Report", Accenture, 08/30/3001.
"RASS Release 7.0.0.0 Release Notes", Accenture, 08/08/2001.
"RASS Release 7.0.0.0 Test Plan", Accenture, 07/19/2001.

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"RASS Release 7.0.0.0 Training Plan", Accenture, 06/20/2001.
"RASS Release 7.0.0.0 Validation, Verification, and Testing Plan", Accenture, 06/20/2001.
"RASS Release 7.0.0.0 System/Subsystem Specifications", Accenture, 06/08/2001.
"RASS Release 7.0.0.0 Database Specifications", Accenture, 06/08/2001.
"RASS Release 7.0.0.0 Program Specifications", Accenture, 06/08/2001.
"RASS Release 7.0.0.0 Project Schedule/ Workplan", Accenture, 05/31/2001.
"Accenture Quality Control Plan", Accenture, 05/31/2001.
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"RASS Release 7.0.0.0 System Security and Privacy Plan", Accenture 05/14/2001.
"RASS Release 7 Multifamily Functionality Business Requirements Document (draft)", Version 1.1, KPMG, 04/25/2001.
"FY2001 Resident Assessment Risk Assessment (Update)", Accenture, 05/15/2001.
"FY2001 Resident Assessment Feasibility Study (Update)", Accenture, 05/15/2001.
"FY2001 Resident Assessment Cost/Benefit Analysis (Update)", Accenture, 05/15/2001.
"FY2001 Resident Assessment Project Plan (Update)", Accenture, 05/15/2001.
"FY2001 Resident Assessment Needs Statement (Update)", Accenture, 05/15/2001.

1.5 Terms and Abbreviations

The following table defines terms and acronyms that may be used throughout the SDM Define Phase Documentation for RASS Release 8.4.0.0.

Term	Definition
APP	Annual Performance Plan
BAH	Booz-Allen & Hamilton
BOP	Business Operating Plan
BRD	Business Requirements Document
DCG	Development Coordination Group
FRD	Functional Requirements Document
FYE	Fiscal Year End
HA	Housing Agency/Housing Authority
HUD	Department of Housing and Urban Development
HUDCAPS	HUD Central Accounting Processing System
HUDWeb	HUD's Intranet Web Site
JAD	Joint Application Development
MF	Multifamily
MFH	Multifamily Housing
NASS	Integrated Assessment Subsystem
OMB	Office of Management and Budget
PDF	Portable Document Format
PHA	Public Housing Agency/Public Housing Authority

Term	Definition
PHAS	Public Housing Assessment System
PIC	PIH Information Center
PIH	Public and Indian Housing
POC	Point of Organizational Contact
QSSI	Quality Software Services, Inc.
RASS	Resident Assessment Subsystem
REAC	Real Estate Assessment Center
REACS	Real Estate Assessment Center System
SDM	System Development Methodology
SOA	Section of the Act
TAC	Technical Assistance Center (formerly the Customer Service Center)
TARC	Troubled Agency Recovery Center
TRACS	Tenant Rental Assistance Certification System
TBD	To Be Defined
WASS	Web Access Security System

1.6 Points of Contact

1.6.1 Information

The following table lists Points of Organizational Contact (POCs) that may be beneficial for future reference.

Contact Name	Organization	Telephone Number
Linda M. Hooks	HUD – Contracting Officer	202-708-1772 ext.5474
Marian Louden	HUD – GTR	202-708-1817 ext.7165
Delton Nichols	REAC – RASS Project Manager	202-708-4932 ext.3115
Yangja K. Lee	REAC – RASS GTM/IT Manager	202-708-4932 ext.3081
Kevin N. Jones	REAC – RASS Assistant IT Manager	202-708-4932 ext.3111
Patrick Evans	BAH	202-708-4932 ext.3021
Gautam Ijoor	QSSI	202-708-4932 ext.3307
Alex Rozental	QSSI	202-708-4932 ext.3495
Eugene Lubarsky	QSSI	202-708-4932 ext.3214
Robin Hilton	QSSI	202-708-4932 ext.3469
Tanuj Sinha	QSSI	202-708-4932 ext.3499
Theresa Han	QSSI	202-708-4932 ext.3214
Robert Armstrong	QSSI	202-708-4932 ext.3929

Contact	Contact Information
RASS System Administrator	Delton Nichols, in coordination with the WASS subsystem, will facilitate RASS system administration as needed. 202-708-4932 ext.3115
REAC Technical Assistance Center	1-888-245-4860

Contact	Contact Information
REAC RASS E-mail address	REAC_RASS@hud.gov
REAC Internet Site	http://www.hud.gov/offices/reac/index.cfm
REAC RASS Internet Site	http://www.hud.gov/offices/reac/products/prodrass.cfm
REAC Intranet Site	http://hudweb.hud.gov/po/reac
HUD Customer Service Center Branch	1-202-708-3300

1.6.2 Coordination

The following organizations must be coordinated with to successfully implement the RASS Release 8.4.0.0 development efforts:

Organization	Support Function
Paradigm Soln./BAH	Development Coordination, Installation, Deployment
HUD IT	Implementation Coordination, Installation, Deployment
Mandaree/Pearson	3rd Party Contractor: Resident Communication/Survey Support
QSSI	Requirements, Design, Development, Testing, Maintenance, Technical Support /Operations, Project Management
REAC	Business Requirements Support, Project Management
WASS	Security

2.0 SYSTEM CHARACTERISTICS

2. SYSTEM CHARACTERISTICS

This RASS Release 8.4.0.0 System/Subsystem Specifications Document is based on the most recent version of the RASS data model, which is subject to change before the scheduled release date of 12/17/2004.

2.1 System/Subsystem Description

The HUD 2020 Management Reform Plan, announced in June 1997, included the establishment of the Real Estate Assessment Center (REAC). REAC is an information-intensive operation responsible for assessing the performance of entities managing or owning housing in which the Department has a financial interest or a statutory obligation to monitor. Most of these properties are public housing or multifamily properties.

A key component of REAC's overall assessment approach is its Customer Service and Satisfaction Survey, which also supports recent government reinvention efforts to become more customer-focused. It implements Executive Order 12862, "Setting Customer Service Standards" within HUD. The Order mandates that Federal agencies "engage customers in a discussion about how to improve government service and their level of satisfaction with existing services." In effect, HUD is empowering the people it serves.

The Resident Assessment Subsystem (RASS) is the electronic communication and data storage system developed by REAC to support administration of the Customer Service and Satisfaction Survey. HUD's investment in developing RASS ties directly back to the Department's APP and its principal objective to help restore the public trust. There is no comparable private sector or alternative government agency addressing this demand or the need for decent, safe and sanitary housing on a national scale. In the long term, the investment in RASS is expected to reduce reporting costs for program participants and help simplify HUD's monitoring procedures. RASS samples the opinion of both public housing residents and tenants of HUD assisted multifamily projects. The results from this effort are currently displayed via online reports to both internal REAC users and external MF owners and agents.

The following table provides a description of the RASS Release 8.4.0.0 new or modified screens and programs.

Screen/Program Name	New/Modified	Description
Review/Approve PHA Scores/Selection	Modified	Internal users will be able to assign last year's scores for selected PHAs and select PHA's by flag type.
Review/Edit Assessment Access Dates	Modified	Internal users will be able to ensure that PHAs perform activities to implement the survey close to the defined Implementation Plan Window
At Risk PHA Report.	New	Internal users will be able to pull up a list of PHAs for a given Field Office, which are at risk of failing RASS.
PHA History Report	Modified	Internal users will be able to display the total number of

Screen/Program Name	New/Modified	Description
		units, the number of low rent units, the number of Section 8 units, the number of occupied units for a PHA, and update the Follow-Up Plan certification information.
Demographic Report	Modified	Internal users will be able to additionally display PHA level section scores by resident's age and gender.
RASS Reports	Modified	The reports in RASS Online System will be able to display the variations of different PHAS regulation such as the Small PHAs Deregulation Rule and FYE changes.

2.2 System/Subsystem Partitions and Functions

Please refer to the RASS Release 8.4.0.0 Functional Requirements Document Appendix A, Requirements Traceability Matrix, for a complete matrix that relates Functional Requirements to RASS Business Rules, Sources, Releases, and Program names and/or Screen Numbers. Please refer specifically to those items pertaining to Release 8.4.0.0 functions.

2.3 Accuracy and Validity

The following table describes the features incorporated in the design of the system/subsystem that meet the accuracy and validity requirements imposed on each system/subsystem level.

Preq #	Performance Requirement	Source
1.0	**Accuracy**	
P1	RASS maintains automatic edits (PIC Addresses)/validation (PIC Addresses, Score Validations, Certification Validations) of external data for approximately 3,200 PHA(s) and approximately 2,000 Multifamily properties.	User Requirement

2.4 Timing

The following table describes the timing requirements imposed on the system/subsystem, if applicable.

Preq #	Performance Requirement	Source
2.0	**Timing**	
P2	RASS will sample PHA unit addresses in a weekend batch process (presuming the batch process has been scheduled). If scheduled, this process will occur at 1:30am on Saturday and Sunday morning.	User Requirement
P3	RASS will score and flag PHA and sample and score MF using an NT script, which is kicked off on Saturday and Sunday at 12:00pm. Jobs will run sequentially beginning with PHA scoring, MF sampling and MF scoring if jobs have been scheduled for processing.	User Requirement

P4	RASS will be available for PHA component updates and certification 24 hours a day (based upon PHA access.)	User Requirement
P5	RASS will provide capability to generate multiple reports 24 hours per day.	User Requirement
P6	RASS will provide capability to load every page in 8 seconds or less (except for those screens that have approved waivers).	User Requirement
P7	RASS will provide capability to execute every stored procedure in 3 seconds or less (except for those with approved waivers).	User Requirement
P8	RASS will approve all unflagged survey scores in conjunction with the REAC nightly batch processing (if scheduled).	User Requirement
P9	RASS will validate PHA survey scores and flag those scores failing to meet predetermined quality assurance criteria in conjunction with the REAC weekly batch processing (if scheduled).	User Requirement
P10	RASS will provide capability to validate and flag unit addresses failing to meet predetermined quality assurance criteria in conjunction with the REAC nightly batch processing (if scheduled) and to exclude those flagged addresses from the sampling population.	User Requirement
P11	RASS will provide capability to calculate survey response percentages per answer selection at the Property-level in conjunction with the REAC weekly batch processing (if scheduled).	User Requirement

2.5 Adaptability

RASS Release 8.4.0.0 software will introduce process and system design improvements to provide enhanced system effectiveness and usability.

RASS Release 8.4.0.0 modifications will provide the capability for internal users to modify the RASS Implementation Plan Activity Dates to be able to restrict PHAs from entering the dates that are not in the predefined window. This will allow RASS Online System to store more accurate data and force PHAs to perform activities in the designated window.

RASS Release 8.4.0.0 introduces the capability to display “At-Risk PHA Report”. The internal users will be able to view PHAs that are at risk of failing RASS. The following criteria is used to identify PHAs that are at risk of failing RASS: PHA’s were assigned prior year’s survey score, PHA’s received a zero survey score from the most recent survey, and PHA’s failed to meet the threshold response rate required to issue a statistically valid survey score. In addition, the following fields will be displayed on the report: PHA ID, # Unit Addresses in PIC (*count),* # Duplicate Addresses (*count*), # Undeliverable Addresses (*count*), Prior Score Assigned (*checkmark),* Zero Score (*checkmark),* Unmet Threshold Response Rate (*checkmark).*

RASS Release 8.4.0.0 will provide the ability for RASS Managers to automatically assign last assessment’s score. This functionality will simplify the task, allowing user to perform the task faster.

RASS Release 8.4.0.0 will provide the Demographic Report by Sections displaying more complete information to users.

RASS Release 8.4.0.0 will remove all of the consortia functionality as the calculations of a consortia PHA's score is being moved outside the PIH-REAC's Secure Systems.

RASS Release 8.4.0.0 will enhance PHA History Report. PHA History Report will display the total number of units, the number of low rent units, the number of Section 8 units, the number of occupied units for a PHA and update the Follow-up Plan certification information column to display "Not Required" if the Follow-Up Plan certification is not required.

2.6 Failure Contingencies

Recommended failure contingencies are documented in the table below. REAC and HUD IT develop an agreement to effectively communicate all issues relating to system failure. All communication should occur in a timely manner. Additionally, REAC notifies its business partners (PHAs, Field Offices, etc.) of any major system failure. Reference the HUD Business Resumption Plan for information on REAC's manual business resumption plan in the event of a system failure.

Cont. #	Point of Failure	Failure	User Impacted	Recommended Max Downtime	Recommended Contingency Plan
1.0	**Client**				
1.1	Hardware	Hardware failure	Single/ Group	1 hour	Utilize backup hardware.
1.2	Software	Program error/failure	Single/ Group	1 hour	Provide scheduled backups to software programs (production programs and programs in development).
1.3	Communications	Internet/Intranet failure	All/Single/ Group	None	Utilize additional communication equipment for back up.
1.4	Data	Data failure: corrupted files or hardware failure	Single/ Group	None	Provide regular backups to production data. A mirror backup with real-time accuracy is available.
1.5	Timing	Data update failure	Single/ Group	None	Utilize existing backup resources.
2.0	**Server**				
2.1	Hardware	Hardware failure	All	None	Utilize backup hardware (backup server, etc.).
2.2	Software	Program error/failure	All	None	Utilize backup software if necessary.
2.3	Communications	Internet/Intranet failure	All	None	Utilize backup resources or allow functions to be performed via the REAC Technical Assistance Center.
2.4	Data	Data failure	All	None	Utilize existing backup resources. Provide regular backups to production data. A mirror backup with real-time accuracy is suggested.

Cont. #	Point of Failure	Failure	User Impacted	Recommended Max Downtime	Recommended Contingency Plan
2.5	Timing	Data update failure	All	None	Utilize existing backup resources.

Backup: HUD performs nightly incremental and weekly full back-ups of their servers and databases. All backups are performed using a tape medium. Refer to the contingencies listed in the above table. Please refer to the HUD Business Resumption Plan.

Fallback: In the event that RASS is unable to perform the necessary functionality, the REAC RASS team may need to perform the necessary analysis manually.

Degraded Modes of Operation: RASS restores completely in the event that full processing capability is not available.

2.7 System Logical Flow

Please refer to Appendix B of the RASS Release 8.4.0.0 Functional Requirements Document for a complete set of system process flow diagrams.

3.0 ENVIRONMENT

3. ENVIRONMENT

The following sections outline the Application Environment for RASS Release 8.4.0.0 including equipment, software, communications, interfaces, summary of impacts, failure contingencies and assumptions and constraints.

3.1 Equipment Environment

The following sections describe the processing, storage, and input/output equipment required for the operation of RASS.

3.1.1 Processors

The following is an overview and diagram of the equipment capabilities required for RASS Release 8.4.0.0, as well as the equipment presently available, and the characteristics of any new equipment:

- The RASS houses the internet and intranet applications on a web farm consisting of six UNIX-based Netscape Enterprise servers in a clustered configuration.
- REAC operates on two DELL 8640 Poweredge database servers with 800mhz Pentium Pro processors. Both servers have 8GB of RAM and 400GB of hard disk storage.
- The RASS client machines are personal computers with modem or local area network web access.

The following is a table of specifications for the Web cluster currently running the RASS application:

SW/HW	Hudapps5	Hudapps6	Hudapps8	Hudapps9	Hudapps10	Hudapps11	Hudapps12	Hudapps13
OS	Solaris 8							
Application server	Allaire's ColdFusion 5.0							
Web server	iPlanet Web server 7							
Cluster S/W	Interwoven's TeamSite 5.5.2 & OpenDeploy 5.5.1							
LDAP	Netscape Directory Server	Netscape Directory Server	Netscape Directory Server	Netscape Directory Server	(none)	(none)	(none)	(none)

SW/HW	Hudapps5	Hudapps6	Hudapps8	Hudapps9	Hudapps10	Hudapps11	Hudapps12	Hudapps13
	4.1.6SP1	4.1.6SP1	4.1.6SP1	4.1.6SP1				
Machine Type	Sun Enterprise 3500	Sun Enterprise 3500	Sun Enterprise 450	Sun Enterprise 3500	Sun Enterprise 420R	Sun Enterprise 420R	Sun Enterprise 420R	Sun Enterprise 420R
CPU	4X336MHz	4X336MHz	4X400MHz	2X336MHz	4X450MHz	4X450MHz	4X450MHz	4X450MHz
RAM	1GBRAM	1GBRAM	1GBRAM	1GBRAM	4GB RAM	4GB RAM	4GB RAM	4GB RAM
HDD	8X9GB	8X9GB	36GB	2X9GB 1X18GB	2X38GB local, SAN	2X38GB local, SAN	2X38GB local, SAN	2X38GB local, SAN

3.1.2 Storage Media

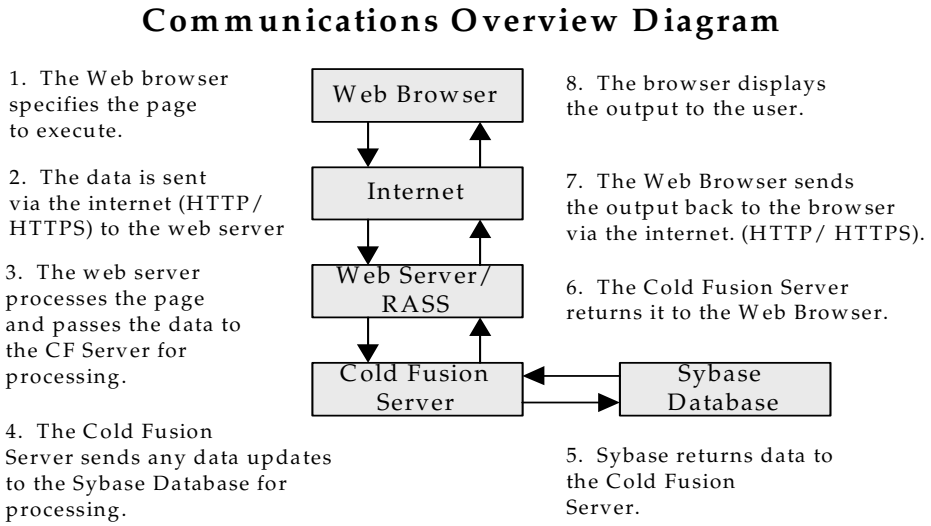
Please reference the Database Specifications Document for the REACS database, which is maintained by DCG.

3.1.3 Input/Output Devices

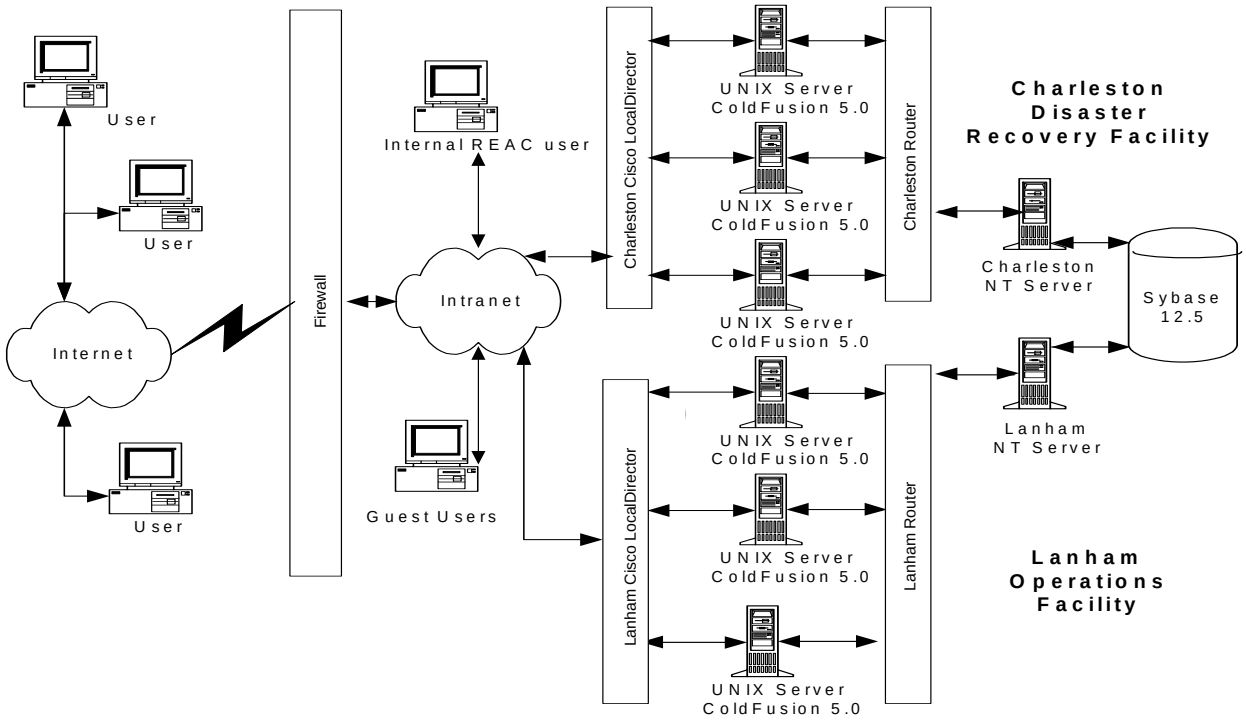
The team monitors transactions with RASS over the Internet for external users and the intranet for internal users. Reference the RASS Release 8.4.0.0 Functional Requirements Document; Section 6.0 Environment for more information.

3.2 Communications Environment

RASS is being developed in the REAC Enterprise architecture in accordance with the HUD standard network. The following diagram illustrates the REAC communications environment:



The following diagram describes the Lanham Operations Facility and the Reston Disaster Recovery Facility.



3.2.1 Network

RASS uses the standard HUD network configuration.

3.2.2 Interface Protocol

RASS uses the HUD standard HTTP and HTTPS protocol.

3.3 Software Environment

Please reference section 3.1.1 and 3.1.2 of this document for a description of the software environment.

The RASS Internet application uses ColdFusion 5.0 version web application software running on iPlanet 7. The Internet application operating system software is Solaris 8. The intranet application operating system software is Windows NT 4.0. The RASS Database software is Sybase version 12.5 running on a Windows 2000 Advanced Server operating system. RASS Clients access RASS through personal computers running the Windows 95 or higher operating system. For HUD users, the computers have HUDWARE II software installed including: Internet Explorer 6.0, Microsoft XP, Adobe Acrobat and Internet connection software.

3.4 Software Interfaces

RASS creates and maintains the following interfaces for its 8.4.0.0 release:

System: HUD Secure Connection / Secure Systems (WASS)

Purpose: RASS uses HUD Secure Connection and Secure Systems for security. RASS maintains its Secure Connection interface.
Impact: The usage of HUD Secure Connection and Secure Systems for security is high-risk. Sensitive and private information is transmitted via this connection, and cannot risk being compromised by an outside source. Additionally, if the Secure Systems subsystem is offline, access to RASS is also offline. RASS requires that HUD Secure Connection and Secure Systems provide uptime 24 hours a day, seven (7) days a week to maintain RASS' ability to remain available to RASS users 23 hours a day, seven (7) days a week.
Input/Output File Format: This section is not applicable to the HUD Secure Connection/Secure Systems Interface because no files are transferred through this interface.
Delivery method: The Secure Connection/Secure Systems Interface is an on line process.

System: Integration Assessment Subsystem (NASS)

- Purpose: NASS integrates with all PHAS subsystems. The purpose of NASS is to generate a PHAS score for each PHA. NASS interfaces with RASS to allow users to be able to access detailed PHA level Follow-up Plan and Section and Question Score Information. RASS maintains its interface with NASS.

- Impact: NASS retrieves scoring data from all PHAS subsystems and displays it on its interface. If users are unable to access NASS, the same information is available through RASS.
- Input/Output File Format: The input files are ColdFusion files for the RASS/NASS Bridge.
- Delivery Method: The Integration Assessment Subsystem interface is an on-line process.

System: PIH Information Center (PIC)

- Purpose: RASS creates an interface to the PIH Information Center (PIC). It allows RASS to sample unit addresses from PIC during the resident survey process. This includes a link for PHA's to verify their unit address information populated in PIC.
- Impact: PIC maintains a comprehensive database of unit addresses for public housing. RASS used to maintain the unit address database, redundant with PIC. The implementation of the PIC interface eliminates the redundancy and allows housing agencies to certify unit addresses just once. In addition, for the interface to function properly, PIC must regularly update the holding database from which RASS samples PIC unit addresses.
- Input/Output File Format: For a detailed list of data formats for the inputs to and outputs from the PIC Interface, please reference Section 3.6.3 Description of Formats of Data of the RASS Release 8.4.0.0 Database Specifications.
- Delivery Method: RASS stores PIC data during the sampling process in tables that are periodically populated by PIC. These tables must exist on a database accessible by the RASS team. PIC utilizes staging database server that houses the periodic update of the PIC extract of resident unit address information. This allows the RASS team to access PIC unit addresses directly. A final decision on the frequency of the refresh is not made until the configuration of the new PIC database server is completed.

System: TRACS Interface

- Purpose: The TRACS file provides RASS with unit address information for the Multifamily sampling process in RASS.
- Impact: RASS obtains a new TRACS file periodically. The impact of not obtaining the new file does not prevent any processes from occurring in RASS; however, RASS compromises the integrity of the Multifamily sampling process and the resulting data.
- Input/Output File Format: The data for the TRACS Interface is provided in a flat (.dat) file, stored in a database table.
- Delivery Method: The flat file for this interface is placed on the HUD server, and a RASS stored procedure retrieves this data for use in RASS functions.

System: REMS Interface

- Purpose: The DCG creates views in the REACS database with data from the HEREMS database to provide RASS with data necessary for MF Sampling.
- Impact: The REMS interface is critical to the RASS MF Sampling process. If the Interface did not exist the MF Sampling process would not function.
- Input/Output File Format: Inputs to this interface are going to be data stored in REACS database tables.
- Delivery Method: Stored procedure acting on the REACS database delivers data for this interface.

3.5 Diagnostics

Diagnostics is the responsibility of the REAC Development Coordination Group (DCG). RASS also has the ability to monitor the production ColdFusion logs for diagnostics at the Web addresses listed below. Each address represents one of the application servers in the production cluster.

http://hudapps4.hud.gov:2000/Coldfusion_logs/
http://hudapps5.hud.gov:2000/Coldfusion_logs/
http://hudapps6.hud.gov:2000/Coldfusion_logs/
http://hudapps8.hud.gov:2000/Coldfusion_logs/
http://hudapps9.hud.gov:2000/Coldfusion_logs/

The availability of the production environment can be verified at the following Web address:
http://10.210.19.36:4545/

Status symbols are used to indicate whether the server is responding.

Furthermore, the RASS team has the ability to report RASS application and data issues found in the production environment by calling in the problem via the Service Ticket Action Resolution System (STARS) and/or submitting a System Change Request (SCR) via the REAC Change Control Board (CCB). Users can find the procedures related to the HUD STARS process on the REAC Document Library under the title Development Coordination. Users can also find the procedures related to initiating an SCR via the REAC CCB in the REAC Document Library database under the title Development Coordination.

3.6 Data and Reports

3.6.1 Inputs

Please reference the Program Specifications document of the RASS Release 8.4.0.0 Design Phase Deliverables for detailed information on data inputs for each program specification.

3.6.2 Outputs/Reports

Please reference the Program Specifications of the RASS Release 8.4.0.0 Design Phase Deliverables for detailed information on data outputs/reports for each program specification.

4.0 SECURITY

4. SECURITY

The following subsection tables discuss the vulnerabilities of RASS as data flows into and out of the system. Refer to the table below for Security Group and associated user roles.

Security Groups	Security Roles
Authorized REAC Personnel	REAC RASS Coordinator; REAC RASS Manager; REAC RASS Statistician; RASS Program Manager
Authorized PHA Users	PHA Submitter; PHA Certifier
Authorized MF Users	MF Owner or Agent
Authorized 3rd Party Users	Survey Administrator
Authorized Guests	All authorized HUD intranet users
Database Administrators	HUD personnel with database access (i.e. DCG or ISG)

4.1 Control Points

The following areas describe the points in the system at which there are known vulnerabilities that require specific safeguards. (A control point can be located at any interface at which there is a movement of data within or between sites.) Security requirements for these control points encompass many of the requirements from the previous RASS FRD and are a continuation of those requirements. The requirement numbers (Req#) reflect those numbers used in the previous RASS FRD. Additional requirements for this release continue sequentially from the previous RASS FRD. The following control points are considered:

4.1.1 Input Control Points

Origin: Identifies the point at which input data will be collected, prepared, and entered into the system.

Data Source (Security Required at Data Collection Points)

Req#	Description of Data/Source	Security Required
S10	Survey Results data from Survey Administrator	Only authorized third party users will be granted access to Survey Results data.
S11	Validated Unit Address data from PIC	Only Database Administrators will be granted access to Validated Unit Address data.
S67	Multifamily TRACS Address data	Only Database Administrators will be granted access to Multifamily TRACS Address data.
S68	Component Certification data	Only authorized PHA and MF Users will be granted access to Component Certification data.
S69	Quality Assurance Address data	Only authorized REAC Personnel will be granted access to Quality Assurance Address data.

Data Source (Security Required at Data Collection Points)

Req#	Description of Data/Source	Security Required
S70	Sampling Designation data	Only authorized REAC Personnel will be granted access to Sampling Designation data.
S71	Status Designation data	Only authorized REAC Personnel will be granted access to Status Designation data.

Disposition: Describes the disposition of source data after it is entered into the system. Refer to HUD Handbook 2229.2 Records Disposition Schedule for Automated Systems.

Data Source (Security Required for Data after Input)

Req#	Description of Data/Source	Security Required
S23	Survey Results data from Survey Administrator	Only Database Administrators will be granted access to Survey Results profile data.
S24	Validated Unit Address data from PIC	Only Database Administrators will be granted access to Validated Unit Address data.
S26	Component Certification data	Only authorized REAC Personnel will be granted access to Component Certification data.
S72	Quality Assurance Address data	Only authorized REAC Personnel will be granted access to Quality Assurance Address data.
S73	Sampling Designation data	Only authorized REAC Personnel will be granted access to Sampling Designation data.
S74	Status Designation data	Only authorized REAC Personnel will be granted access to Status Designation data.

Data Correction: Identifies remote devices intended to perform updates or corrective actions.

Data Correction

Req#	Description of Data	Access Rights
S36	Survey Results data from Survey Administrator	Only Database Administrators will be granted access to Survey Results profile data.
S37	Validated Unit Address data from PIC	Only Database Administrators will be granted access to Validated Unit Address profile data.
S39	Component Certification data	Only Database Administrators and authorized REAC Personnel will be granted access to Component Certification data.
S75	Quality Assurance Address data	Only authorized REAC Personnel will be granted access to Quality Assurance Address data.
S76	Sampling Designation data	Only authorized REAC Personnel will be granted access to Sampling Designation data.
S77	Status Designation data	Only authorized REAC Personnel will be granted access to Status Designation data.

Error Correction: Identifies the points at which data input errors will be detected, reported, and corrected.

Error Correction		(Security Required at Error Points)
Req#	Description of Error Point	Security Required
S49	Error in Survey Results data	Only Database Administrators granted access for correction.
S50	Error in PIC Interface data	Only Database Administrators granted access for correction.
S52	Error in Component Certification data	Only Database Administrators granted access for correction.
S78	Error in Multifamily TRACS data	Only Database Administrators granted access for correction.
S79	Error in Quality Assurance Address data	Only authorized REAC Personnel granted access for correction.

4.1.2 Process Control Points

System Interface: Identifies the points in the processing cycle at which the systems will pass data to or receive data from other systems.

System Interface Security		(Automatic System Security Performed)
Req#	Description of Data/Source	Security Required
S62	All data processing within RASS	The RASS will operate on a secure site. All data transfers will be encrypted.

Accuracy and Completeness: Identifies the points in the processing cycle at which the system will provide notification of success or failure of the requested processing.

Completeness		(System Notification of Complete Data)
Req#	Description of Data	Security Required
S58	All data processing within RASS	The Database Administrators will receive notification of the success or failure of all RASS data processing transactions .

4.1.3 Output Control Points

Production: Identifies types and locations of devices authorized to receive output.

Output		(Personnel/Groups permitted to Request or Receive Output)
Req#	Description of Output	Access Rights
S62	PHA Information	Authorized PHA Users and authorized REAC Personnel.
S63	MF Information	Authorized MF Users and authorized REAC Personnel.
S64	Internal REAC Reports	Authorized REAC Personnel.

Distribution: Identifies the steps involved in the distribution and disposition of output products.

Distribution (Personnel/Groups permitted to Distribute Output)

Req#	Description of Output	Distribution Rights
S65	PHA Information	Distribution of output determined by individual security permissions as managed by the Web Access Subsystem (WASS).
S66	MF Information	Distribution of output determined by individual security permissions as managed by the Web Access Subsystem (WASS).

4.2 Vulnerabilities

REAC is susceptible to information misrepresentation by unauthorized individuals submitting data from the PHA(s). Executive Directors distribute appropriate user ID to coordinators via mail. All PHA users then apply for a user ID. The coordinator has rights to grant system access to the user for that PHA.

4.2.1 Vulnerabilities - Input Control Points

- Origin: RASS has no vulnerabilities concerning the origin as this function is controlled by the data sources.
- Data Entry: RASS is vulnerable if individual users obtain access rights that do not pertain to role the individual is performing. Secure Connections, PHA Coordinators, MF Coordinators and System Administrators provide users maintain the correct action codes.
- Disposition: RASS has no vulnerabilities concerning the disposition of data.

4.2.2 Vulnerabilities - Process Control Points

Accuracy and Completeness: Accuracy and completeness are verified during the RASS process.

4.2.3 Vulnerabilities - Output Control Points

- Production: RASS is vulnerable if individual users obtain access rights that do not pertain to role the individual is performing. Secure Connections, PHA Coordinators, MF Coordinators, and System Administrators provide users maintain the correct action codes.
- Distribution: RASS is vulnerable if individual users obtain access rights that do not pertain to role the individual is performing. Secure Connections, PHA Coordinators, MF Coordinators and System Administrators provide users maintain the correct action codes.

4.3 Safeguards

The following areas describe the safeguard requirements at each control point used to reduce the vulnerabilities.

4.3.1 Administrative Safeguards

(1) Personnel: REAC administrators will be responsible for creating, updating and deleting user IDs and access levels.

(2) Constrained User Environment: RASS is designed to be an on-line transaction system and will be available 23 hours a day, seven days a week. This does not include scheduled downtime for server maintenance or application upgrades.

(3) Access/Permission: REAC security administrator and/or the PHA define user access and permission rights to RASS.

4.3.2 Physical Safeguards

(1) Dedicated Equipment: The REAC servers are located at a computer facility located in Lanham, Maryland, with a backup (coop) facility in Reston, Virginia.

(2) Storage and Protection: Server and database backups are stored in the tape library that is currently located in Lanham, MD. Other materials such as this Functional Requirements Document will be kept electronically both on the REAC Document Library in a Lotus Notes database and in Document Management Module. Each location provides adequate backup mechanisms, preventing loss in the event of system failures.

4.3.3 Technical Safeguards

(1) User Access: The following provides requirements for managing user access:
- PHA Employees and Agents – PHA(s) will manage their users by having designated coordinators provide users access to submit information to REAC. If a user has not been provided this authority by a PHA, they will not be able to submit or view any RASS information.
- MF Owners and Agents – MF Owners and Agents are providing authority by the MF coordinator to view survey information in REAC. If a MF user has not been provided this authority by a coordinator, they will not be able to submit or view any RASS information.
- REAC – REAC users will be provided access to RASS information as appropriate. After obtaining a user ID from HUD ADP Security a REAC Security Administrator can provide the appropriate access by subsystem project manager approval.
- HUD – HUD users who have LAN IDs that can access HUD's Intranet will be provided read-only access to RASS information as appropriate. Process Safeguards: Identify the need for any unique data validation procedures or data encryption that may provide added integrity.

(2) Security Functions: Only authorized users will be able to submit information to RASS. REAC will have the ability to determine exactly who submitted information for which PHA.
(3) Encryption: All RASS information will be encrypted as a part of the current RASS security/firewall setup.